

MEADOW VOLE PREDATION BY A MERLIN WINTERING IN SASKATOON, SASKATCHEWAN

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The prey of the Merlin (*Falco columbarius*) is predominantly birds weighing less than 50 g (Bent 1938; Brown and Amadon 1968; Cade 1982). Large insects such as dragonflies (Order Odonata), grasshoppers (Order Orthoptera) and moths (Order Lepidoptera) are commonly reported as part of the diet but less frequently taken (Allen and Peterson 1936; Breckinridge and Errington 1938; Cushing 1941; Bond 1951; Street 1960; Oliphant 1974). Mammals also make up a smaller proportion of the prey; Brown and Amadon (1968) suggest that it is about 5% for Merlins worldwide while 3.4% is reported by Fisher (1893) for Merlins in North America.

Among mammalian prey, bats (Order Chiroptera) are taken more commonly than terrestrial forms. In the United States, the Merlin is reported to prey upon *Myotis* sp. and the Red Bat (*Lasiurus borealis*) (Allen and Peterson 1936; Johnson and Coble 1967). Stomach and pellet analysis also revealed the remains of rodents (*Microtus* sp.), pocket gophers (Family Geomyidae), Thirteen-lined Ground Squirrel (*Spermophilus tridecemlineatus*) and Least Chipmunk (*Eutamias minimus*) (Allen and Peterson 1936; Bent 1938; Burleigh 1972; Becker 1984). Although Decker (1972) reports a Merlin in Edmonton, Alberta, catching a brown myotis bat (*Myotis lucifugus*) and Oliphant found the skull of a Least Chipmunk in a Merlin nest in Saskatchewan (pers. comm.), Fyfe (cited in Trimble, 1975) records no mammals in the diet of Merlins breeding on the Canadian Prairies. Oliphant and McTaggart (1977) listed only small birds and insects for the diet of breeding Merlins in Saskatoon, Saskatchewan.

As part of a study of Merlins wintering in Saskatoon, Saskatchewan, I monitored 3 individuals fitted with tail-mounted radio-transmitters (Model SM-1, AVM Instrument Company) between 25 January and 13 March 1984. Although all of these birds preyed primarily upon House Sparrow (*Passer domesticus*), one Merlin was observed to take mammalian prey. This bird was a 2-yr old female, released in the city on 25 January 1984 after treatment for an ulna fracture suffered on 5 December 1983 in Regina, Saskatchewan. She usually hunted

on small unused lots and storage yards in an industrial section on the outskirts of the city. Weather during the observation period was unseasonably warm, as all snow in unprotected areas was melted by the last week of February.

During 225 h of observation, the Merlin consumed 22 House Sparrows and 8 rodents (2 immediately following her release and 6 in early March). I identified 1 of these rodents as a Meadow Vole (*Microtus pennsylvanicus*) by examining the guard hairs recovered from a plucking perch. The other 7 rodents were eaten on inaccessible perches and not positively identified. However, because of their appearance and location of capture, I assumed that at least 5 of these were also Meadow Voles. Successful hunting attempts on rodents were mounted from perches on power poles or building corners. The Merlin left the perch in a slow, fixed-wing glide to a point just over the prey followed by a quick downward plunge with the feet extended. Several attempts were also made from ground-level perches but these all proved unsuccessful.

Cade (1982) suggested that young Merlins rely on non-avian prey more than adults because they lack the skills to capture birds. Instead, they feed on insects and rodents which are easier to catch. Perhaps this female fed on voles during the period immediately after her release because she had not yet regained her bird-catching skills. The appearance of rodents, in the Merlin's diet in early March, may also represent the opportunistic nature of raptor hunting. Warm weather during this period melted most of the snow and thus more easily exposed the voles, which would normally be protected beneath this cover, and allowed the female to exploit their availability.

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